

Cloud-Based Electronic Test Procedures, Phase II

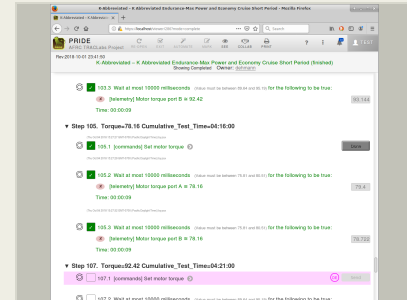
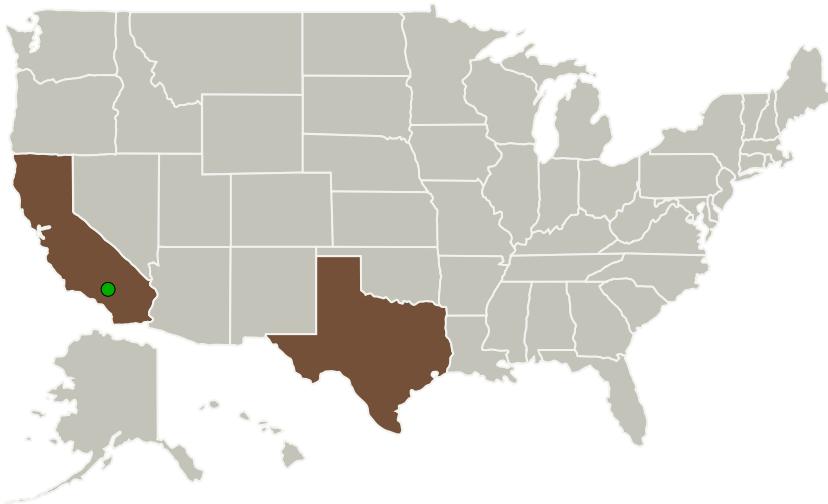
Completed Technology Project (2017 - 2019)



Project Introduction

Procedures are critical to experimental tests as they describe the specific steps necessary to efficiently and safely carry out a test in a repeatable fashion. The procedure process includes creating test procedures, validating those procedures, executing the procedures during a test, and then analyzing and auditing the results. Relying on paper-based test procedures hampers data collection and distributed teamwork during test operations. In Phase I of this project, TRAC Labs prototyped a cloud-based electronic test procedure system that provides procedures via web browsers on tablets or laptops and guides the operator through the procedure step-by-step. TRAC Labs also implemented a CAN bus interface between its electronic test procedure system and test hardware. This allows data from the test hardware to be displayed in-line with the procedure and for the procedure to send commands to the test hardware. TRAC Labs will extend the electronic test procedure system in Phase II and integrate with NASA's AirVolt aeronautics test facility.

Primary U.S. Work Locations and Key Partners



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Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Project Transitions	2
Images	2
Organizational Responsibility	2
Project Management	2
Technology Maturity (TRL)	2
Technology Areas	3
Target Destinations	3

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Completed Technology Project (2017 - 2019)



Organizations Performing Work	Role	Type	Location
TRAC Labs, Inc.	Lead Organization	Industry	Webster, Texas
● Armstrong Flight Research Center (AFRC)	Supporting Organization	NASA Center	Edwards, California

Primary U.S. Work Locations	
California	Texas

Project Transitions

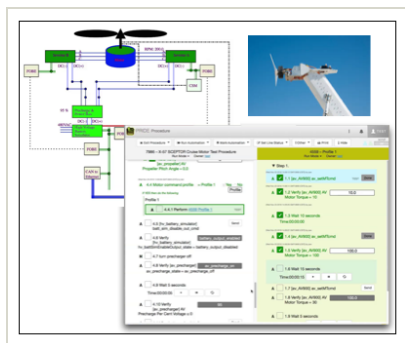
▶ **April 2017:** Project Start

✓ **August 2019:** Closed out

Closeout Documentation:

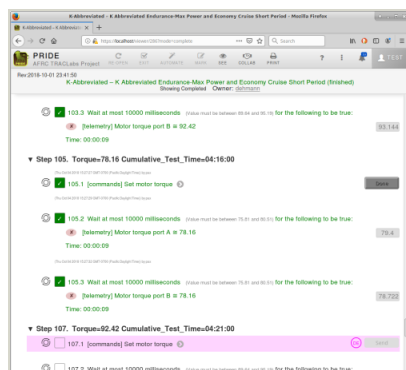
- Final Summary Chart (<https://techport.nasa.gov/file/140952>)

Images



Briefing Chart Image

Cloud-Based Electronic Test Procedures, Phase II Briefing Chart Image
(<https://techport.nasa.gov/image/135660>)



Final Summary Chart Image

Cloud-Based Electronic Test Procedures, Phase II
(<https://techport.nasa.gov/image/136925>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

TRAC Labs, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

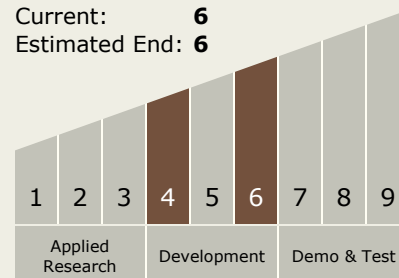
Carlos Torrez

Principal Investigator:

David M Kortenkamp

Technology Maturity (TRL)

Start: 4
Current: 6
Estimated End: 6



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Technology Areas

Primary:

- TX13 Ground, Test, and Surface Systems
 - └ TX13.2 Test and Qualification
 - └ TX13.2.5 Flight and Ground Testing Methodologies

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System